Teachers’ Perceptions Toward Curriculum Reform and In-service Training Programs in Chinese Agricultural Schools

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Abstract

Teachers have been considered the most important force in educational reforms. As Chinese agricultural schools have gradually transferred from an academic institution to vocational education, the need for renewing teachers’ attitudes, knowledge, and skills to implement the curriculum innovations is evident. The purpose of the study was to describe teachers’ perceptions toward teacher training and the reforms of curriculum and instruction in agricultural schools in China. The results revealed that teachers supported curriculum reform and they were interested in trying new ideas in their teaching practice. They believed that high quality of teacher training and professional development programs would help them to carry out the reform initiatives in curriculum and instruction. Therefore, policy makers and administrators should seize this opportunity to develop effective teacher education programs and address the needs of teachers in the process. To resolve this long-stand problem facing agricultural teachers that lack formal pedagogy training in China, universities should strengthen their efforts to provide both pre-and in-service training for agricultural teachers. The role of university in teacher education should be legitimized and mandated. Until teacher education in agriculture is a part of higher education, any reform efforts in teacher training would be merely a temporary solution.
**Introduction/Problem statement**

In response to continued reforms in the nation’s economic and agricultural systems, agricultural schools in China have been taking actions to reform their existing educational programs and strengthen their vocational programs during the past decade. Decentralized policy initiatives and approaches in curriculum planning, implementing, and management are major features of these reform strategies (Weng, 1998).

In addition to modifying the existing curriculum by emphasizing practical training and job-related skills building in workplace, reform efforts have been strengthened by the information obtained from educational systems outside China. Competency-based education, modular teaching approach, and student-centered instruction have been tried in some schools with support from the Ministry of Agriculture and the Food and Agriculture Organization of United nations since 1994.

Teachers have been identified as key players in this educational endeavor. Traditionally, agricultural teachers are not required to be certified for teaching, therefore most of them lack systematic education in pedagogical knowledge and instructional methodology. This problem has aggravated the changes agricultural schools would like to implement. If systematic professional development of teachers is not addressed it will be challenging to move the reform movement forward (Chen, 2000).

**Purposes and Objectives**

The purpose of the study is to describe teachers’ perceptions toward the teacher training and the reforms of curriculum and instruction in Chinese agricultural schools. The objectives of the study were to:

- describe the demographics of teacher respondents;
- describe teachers’ perceptions related to policies, management strategies, and resources in teacher training programs; and
- examine teachers’ working conditions and their attitudes toward curriculum reform initiatives within competency-based education.

**Theoretical Framework**

It is nearly universally accepted that the teacher is the most important focus for changes within schools. School improvement efforts and educational reforms will only happen when teachers are regarded as a key link of the reform process (Gordon & Yocke, 1999).

Teachers are the final arbiters in the policies they choose to implement and the leaders they choose to follow. Therefore teachers’ knowledge and involvement are extremely important in determining what can or cannot be implemented. As Reed (2000) indicated, teachers need to be intimately involved in the conceptualization and direction of school reforms. This means that a teacher in isolation, a norm in the profession, must give way to a shared decision-making process. Teachers need to share what they know with leaders, policymakers, and other teachers. Teacher knowledge needs to be an integral part of the process.
Fine and Raack (1994) noticed that when analyzing the failure of educational research and best practices in improving classroom instruction and student achievement, educators are often overlooked for an obvious reason. That is most systems lack an adequate teacher professional development program. An effective professional development system must be in place for teachers to translate research into classroom practice. Again and again when attempts are made to implement new instructional innovations, when the systems fail, it is because they have not provided teachers with ongoing opportunities to study, reflect upon, and apply the research on teaching and learning.

Time is another factor affecting teachers’ participation in the reform process. Cuban (1993) indicated that changes in classroom tradition (from teacher-centered to student-centered) impose a direct, unrelenting obligation upon the teacher to invest far more time and effort than is invested by teacher-centered colleagues. Erickson (2001) noticed that curriculum and instruction were critical points for educational change. This job cannot be done effectively without providing quality time for professional dialogue, training of staff, and curriculum development. Teachers deserve quality-planning time to develop an effective curriculum framework that allows them to raise intellectual and academic standards.

Methods and Procedures

The population for the study included teachers from 12 agricultural schools in China. The total number of teachers obtained from the 12 participant schools was 1,299. A systematic random sampling technique was used to select teachers from each school. Three hundred ninety-eight survey questionnaires were sent to selected teachers through a contact person in each participant school. There were 350 surveys returned. The response rate was 88%.

Questionnaires used to collect data were constructed based on an extensive literature review. The questionnaires were translated into Chinese and the translation was verified both by Chinese professors at the Pennsylvania State University and in China. The questionnaires were also pilot tested in an agricultural school in China.

The survey questionnaires used for data collection included five parts. Two parts collected respondents’ perceptions toward policy, management, resources, and working conditions regarding curriculum reforms and training programs. One party documented teachers’ current and desired knowledge and skills in curriculum and instruction. One section gathered demographic information about the respondents. The last part devoted to rating factors that contribute to curriculum reform.

Results

Demographic information on respondents

The majority of the respondents were male (61%) while the female respondents accounted for 39%. A substantial number of the respondents (70%) taught agricultural subjects, 29% taught academic subjects, and 1% taught both vocational and academic subjects.

The respondents’ age ranged from 23 to 60 years old, mostly (72%) fell between 27 and 40 years old. Their work experience ranged from 1 to 38 years and a large number of teachers (82%) had worked between five to 20 years. Years of the respondents’ teaching...
experience were similar to years of their work experience. The majority of the teachers (80%) taught between three to 20 years.

A large number of respondents (83%) were bachelor degree holders and only 17% had other educational backgrounds. Eight percent teachers had Masters degree, another 8% received college diploma (equal to associate degree in the U.S.), and 2% were middle level diploma recipients.

**Policies, management, and resources in teaching training**

The examination of the perceptions toward policies, management, and resources in teaching training programs included 14 items in the instrument. Table 1 presents means and standard deviations for all 14 items.

The mean scores for 14 items ranged from 3.56 to 2.49. Data showed that respondents tended to agree with the first 13 items with the mean scores above 2.60. Only one item received a mean score below 2.50.

The item “Teachers need high quality in-service training activities to keep updated in instructional methods” received highest mean score (\(M=3.56\)), followed by “The current reforms emphasizing competency-based education is in right direction” with the mean score 3.50. The other eight items received means above 3.00, ranged from 3.44 to 3.03. Four items received mean scores falling between 2.96 to 2.49. The respondents tended to disagree with the statement “Current teacher professional development programs conducted at my school are adequate in enabling teachers to implement new curriculum in the classroom” as it was rated the lowest mean (\(M=2.49\)) among 14 items.

**Working conditions and competency-based education**

To identify teachers’ working conditions and their perceptions toward competency-based education, 21 items were presented in the instrument. Table 2 contains means and standard deviations regarding all 21 items.

The mean scores for all 21 items ranged from 3.42 to 2.52. The item “Competency-based education is an effective system for each school to adopt” received the highest mean score (\(M=3.42\)), followed by “I support curriculum reform” with a mean score 3.35. Another seven items received mean scores above 3.00, ranged from 3.24 to 3.00.

The respondents tended to disagree with four reversed coded items: “I am not interested in new teaching methods” (\(M=3.15\)), “I don’t have autonomy in my teaching” (\(M=2.88\)), “I don’t have time to try a new curriculum” (\(M=2.81\)), and “I don’t know how to use Competency-based education in my teaching practice” (\(M=2.69\))

The respondents tended to slightly agree with the items “My teaching heavily depends on a textbook” (\(M=2.52\)) and “I get extra salary for developing new curriculum materials” (\(M=2.58\)). These two items were rated as lowest mean scores among 21 items.
Table 1: Means and standard deviations regarding perception toward policies, management, resources in teaching training programs

<table>
<thead>
<tr>
<th>Policies/Management/Resources</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers need high quality in-service training activities to keep updated in instructional methods.</td>
<td>341</td>
<td>3.56</td>
<td>.57</td>
</tr>
<tr>
<td>The current reforms emphasizing Competency-Based Education is in right direction.</td>
<td>339</td>
<td>3.50</td>
<td>.54</td>
</tr>
<tr>
<td>Agricultural universities need to provide pre-service pedagogical training programs for agricultural teachers.</td>
<td>339</td>
<td>3.44</td>
<td>.66</td>
</tr>
<tr>
<td>Teachers need to play a greater role in curricula development.</td>
<td>341</td>
<td>3.40</td>
<td>.57</td>
</tr>
<tr>
<td>Teachers need to be better prepared to implement a new curriculum through ongoing training.</td>
<td>338</td>
<td>3.38</td>
<td>.66</td>
</tr>
<tr>
<td>In service teacher training programs need to address problems encountered in new curricular implementation.</td>
<td>336</td>
<td>3.38</td>
<td>.60</td>
</tr>
<tr>
<td>Adequate financial support is the key to teacher training programs.</td>
<td>336</td>
<td>3.34</td>
<td>.64</td>
</tr>
<tr>
<td>My school rewards those who have tried new methods in their teaching.</td>
<td>310</td>
<td>3.09</td>
<td>.82</td>
</tr>
<tr>
<td>My school evaluates teaching reform on a regular basis.</td>
<td>326</td>
<td>3.09</td>
<td>.66</td>
</tr>
<tr>
<td>My school has a long-term plan for teacher professional development.</td>
<td>281</td>
<td>3.03</td>
<td>.84</td>
</tr>
<tr>
<td>My school provides adequate funds to train teachers to implement a new curriculum.</td>
<td>305</td>
<td>2.96</td>
<td>.90</td>
</tr>
<tr>
<td>My school allocates time for teachers to work on developing new curriculum.</td>
<td>284</td>
<td>2.75</td>
<td>.90</td>
</tr>
<tr>
<td>Training on Competency-Based Education organized by the Ministry of Agriculture in the past few years was very helpful.</td>
<td>258</td>
<td>2.62</td>
<td>.72</td>
</tr>
<tr>
<td>Current teacher professional development programs conducted at my school are adequate in enabling teachers to implement new curriculum in the classroom.</td>
<td>316</td>
<td>2.49</td>
<td>.80</td>
</tr>
</tbody>
</table>

Scale: 1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree
Table 2: Perceptions toward work situations and competency-based education

<table>
<thead>
<tr>
<th>Work Situation/Competency-Based Education</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competency-based education is an effective system for each school to adopt.</td>
<td>338</td>
<td>3.42</td>
<td>.61</td>
</tr>
<tr>
<td>I support curriculum reform.</td>
<td>339</td>
<td>3.35</td>
<td>.58</td>
</tr>
<tr>
<td>I believe training is a very powerful tool to prepare me for innovative teaching.</td>
<td>327</td>
<td>3.24</td>
<td>.64</td>
</tr>
<tr>
<td>I can use competency-based education if I am properly taught.</td>
<td>339</td>
<td>3.23</td>
<td>.59</td>
</tr>
<tr>
<td>I am not interested in new teaching methods.*</td>
<td>338</td>
<td>3.15</td>
<td>.69</td>
</tr>
<tr>
<td>I plan to try some new methods in my teaching next semester.</td>
<td>307</td>
<td>3.14</td>
<td>.56</td>
</tr>
<tr>
<td>There are very limited new teaching materials that I can use in my class.</td>
<td>338</td>
<td>3.08</td>
<td>.72</td>
</tr>
<tr>
<td>I have too much work at the present time.</td>
<td>334</td>
<td>3.06</td>
<td>.72</td>
</tr>
<tr>
<td>I understand the concept of competency-based education.</td>
<td>325</td>
<td>3.00</td>
<td>.53</td>
</tr>
<tr>
<td>I usually get instructional support from peers.</td>
<td>330</td>
<td>2.98</td>
<td>.59</td>
</tr>
<tr>
<td>I have incorporated new ideas from competency-based education in my teaching.</td>
<td>299</td>
<td>2.98</td>
<td>.70</td>
</tr>
<tr>
<td>I feel my school would support me to introduce new ideas.</td>
<td>302</td>
<td>2.96</td>
<td>.69</td>
</tr>
<tr>
<td>I know how to develop a new curriculum.</td>
<td>316</td>
<td>2.90</td>
<td>.58</td>
</tr>
<tr>
<td>I don’t have autonomy in my teaching.*</td>
<td>329</td>
<td>2.88</td>
<td>.76</td>
</tr>
<tr>
<td>I am satisfied with my teaching performance.</td>
<td>327</td>
<td>2.81</td>
<td>.61</td>
</tr>
<tr>
<td>I don’t have time to try a new curriculum.*</td>
<td>330</td>
<td>2.81</td>
<td>.77</td>
</tr>
<tr>
<td>I have access to the Internet to obtain new materials for my teaching.</td>
<td>310</td>
<td>2.77</td>
<td>.82</td>
</tr>
<tr>
<td>I want to try something new in my teaching but don’t feel prepared to do so.</td>
<td>327</td>
<td>2.69</td>
<td>.74</td>
</tr>
<tr>
<td>I don’t know how to use competency-based education in my teaching practice.*</td>
<td>331</td>
<td>2.69</td>
<td>.75</td>
</tr>
<tr>
<td>I get extra salary for developing new curriculum materials.</td>
<td>248</td>
<td>2.58</td>
<td>.82</td>
</tr>
<tr>
<td>My teaching heavily depends on a textbook.</td>
<td>340</td>
<td>2.52</td>
<td>.79</td>
</tr>
</tbody>
</table>

Scale: 1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree. * Items reverse coded
Conclusion and Discussions

Demographics

The average age of teachers was 36 years old, with 14 years of work experience and 13 years of teaching experience. The majority of the respondents were males. They were bachelor degree holders and most possessed the title of lecturer.

The results indicated that the most teachers surveyed were middle aged with more than ten years teaching experiences and most desired updating their knowledge and skills. These teachers represent the main force of the reform movement. They are experienced and capable of changes. They are technically trained and should know how to work within the system to promote changes. Moreover, these teachers appear to be interested in change as they continue to participate in professional development activities. Therefore, policies should be devised to better use their talent and experience in reforming agricultural educational system.

Policies and resources

Overall, the respondents thought there were some policies, resources, and management strategies along with the teacher professional development programs and activities in agricultural schools. However, they also thought that these policies and resources were far sufficient to address the problems and challenges facing teachers in their practice of the reform strategies. Most respondents believed that teachers deserved high quality in-service training to keep updated in teaching and they needed to play a larger role in curriculum development. The respondents thought that the adoption of competency-based education during past years was the correct approach. They perceived that current training and professional development opportunities were inadequate in helping them to implement new curriculum initiatives. They also supported the idea that agricultural universities should provide pre-service training for agricultural teachers.

This study again has proved that the importance of high quality and timely in-service training and professional development activities in sustaining reform efforts. Therefore, the policies, resources, management strategies should be formulated to strengthen both quality and quantity of teacher training and professional development programs. Many educators indicated (Erickson, 2001; Cuban, 1993; Reed, 2000) that teachers deserve quality time, professional development opportunities, and involvement of decision-making process to make changes in their teaching practice. Therefore, an empowered teacher has assumed the responsibility to become a designer of instruction and an innovator of teaching practice.

Working conditions and competency-based education

In general, respondents perceived their working conditions related to reform were unfavorable. They were overloaded by heavy teaching load, beset with inadequate technical and administrative support, and encountered obstacles due to insufficient equipment and funding. However, they expressed their support regarding reform initiatives and felt positive about the prospects of using competency-based education in agricultural schools.

Despite the inadequacy of resource and technical support, teachers were willing to participate in the reform movement. The problems and difficulties teachers faced in their
work did not seem to discourage them and they still believed the reform was important. Moreover, they perceived training was a very powerful tool to assist teachers for innovative teaching.

In fact, the results have challenged a traditional Chinese concept that teachers are not interested in reform and unwilling to devote their time to developing new curriculum and to try different teaching methods. Historically, it was believed that teachers did not try new ideas in teaching, as they felt either inadequate or even discouraged to do so because of policies or administrative controls. Teachers would be able to carry out reform initiatives if they were properly taught and supported by administration and resources.

**Implications and Recommendations**

In this era of educational reforms, teachers are being asked to assume new roles and adopt new practices that emphasize teaching for understanding and creativity rather than a routine driven traditionally accepted practice. As teachers have been put in the forefront of the educational reform movement, teacher training programs and professional development activities have become an essential function to prepare them to implement curriculum and instructional innovations. In addition, teachers’ enthusiasm, willingness, and motivation found in this study can be an important contribution to the success of the reform efforts. Thus, it is critical to devise new strategies and allocate resources to explore all possibilities and potentials and enhance the reform efforts.

Administrators should seize this opportunity and move quickly forward to develop professional development opportunities, and at the same time, improve working conditions for teachers. Both administrative and technical support should be put in place for teachers to fulfill their potential to improve students learning through innovative curriculum and instruction. Pierce (1981) revealed, “support of administration” was one of three factors attributed to a teacher’s attitude toward innovative practices. He found that those who had administrative support were more likely to adopt changes and innovations in their teaching.

Based on the results from this study, a need for teacher training and professional development is evident. It is strongly recommended that teachers be given the opportunities and support to attend professional development programs, which should increase their current knowledge base and enable them to successfully implement curriculum innovations. Specifically, the recommendations are suggested in the following paragraphs.

**Training content**

The results from this study should be utilized to devise effective teacher training and professional programs. Teachers should be taught how to develop, initiate, and implement curriculum innovation in their teaching practice. To address the effectiveness and accountability of curriculum reform efforts, the teacher must be updated with a curriculum design and delivery process much different from anything they have previously practiced. The new curriculum reform requires rethinking of learning theory, planning process, delivery methods, and assessment techniques in the vocational education context to better address the needs of human resource development during the nation’s economic transformation. Therefore, teacher training and professional development activities should address the needs
of teachers for new curriculum development and the delivery approach to carry out this reform movement.

In addition, more training in competency-based education that targets different groups of teachers needs to be planned. An in-depth training in CBE for those who have tried the method and an introductory workshop for novice teachers should be developed.

Moreover, training in educational technology should be provided to teachers and assist them to effectively implement curriculum innovations.

**Training methods**

Various formats should be developed to empower teachers. Workshops, seminars, teacher study groups, class observations, mentoring programs are common practices in Chinese schools that can be used to deliver professional development programs and activities. Especially, the teacher study group, class observation, and mentoring activities should be improved and strengthened. These are most feasible and effective methods in teacher professional development in China and need to be recognized and reinforced. Using those methods, teachers do not need to leave their busy schedule while still having opportunities to update their skills and knowledge through interacting with peers and other sources. While nationwide workshops are still appropriate on some occasions, most professional development opportunities should be school-based and incorporated into teachers’ routine practice.

Long-term professional development also needs to be planned, which involves certificate training and graduate education program studies. Those approaches have been practiced in some agricultural schools in recent years and need to be expanded and embedded into teacher professional development plans.

**Teachers’ involvement and autonomy**

Teachers need to be consulted and involved in each aspect of reform efforts and practices. When they are acknowledged and informed they could become more committed to the reform process (Kelly, 1982). There are various means by which teachers could be involved and play an active role in the reform process such as through regular communications, meetings, providing them a platform to voice their opinions and suggestions to support reform initiatives. These democratic management strategies could stipulate more involvement of teachers and sharing their expertise.

Teachers should also be given autonomy in the practice of new strategies in teaching and learning. Teachers should have a feeling that they are in control and they are doing something good and responsible for their students and society to develop them a sense of ownership in the entire process.

**Policies and incentives**

Administrative policies and incentives should be in place to support teachers’ efforts in implementing reform initiatives. There should be policies and incentives that favor and support those who have made an effort to improve teaching and learning in the classroom.
In addition, teacher professional development programs should be integrated into the teacher annual evaluation and promotion plan. Teachers’ efforts to improve teaching quality need to be recognized through administrative incentive or professional promotion. In this way an encouraging atmosphere could be created and eventually the motivation for professional growth could become part of routine activity for all teachers.

**Role of universities in teacher education**

The role of higher education in agriculture in providing pre- and in-service training for vocational agricultural teachers should be legitimized and mandated. Historically, agricultural universities and colleges have not been required to provide pedagogy training for the graduates who have entered into teaching careers. In some universities, administrators recruit group of students and place them into a class that prepares them to be future teachers. However, upon graduation, there are no policies and mandates can help them obtain a teaching position. Also, because this form of education is completed as a group (usually less than 60 students enrolled in this kind of class in each agricultural university) there has been little opportunity for individuals to choose education as a career. Most of these students have ended up with other types of jobs rather than teaching, as teaching in China is not considered a popular career choice.

Teacher education in agriculture needs to be integrated into higher education in China. Until agricultural education is a part of the system of higher education, all reform efforts will be merely a temporary solution. Strengthening the role of universities in teacher education should be seen as a long-term effort to improve teacher education and eventually upgrade the quality of agricultural vocational education in China.
References


